TARGET
EMISSION SERVICES

# LDAR Report

# Mark West

## Liberty - Down Homes Stn.

## Annual Report

NSPS Subpart OOOOa

PERIOD: 2019


Prepared By:

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| Company: | Mark West | | Report: | Annual LDAR | | |
|---|---|---|---|---|---|---|
| District: | Liberty | | Regulation(s): | NSPS Subpart OOOOa | | |
| Facility Name: | Liberty - Down Homes Stn. | | Report Date: | Sep 24, 2019 | | |
| GPS Coord. | 40.473907 | -80.357208 | Period: | 2019-Jan-01 | TO | 2019-Dec-31 |

This report satisfies the requirements of 40 CFR §60.5420a(b)(7) for the collection of fugitive emissions components at the above referenced compressor station.

**Information required to be reported per §60.5420a(b)(7)(i) - (vi)**

| Monitoring Quarter | Q1 | Q2 | Q3 | N/A | N/A |
|---|---|---|---|---|---|
| Survey Start Date/Time | 01/15/2019 6:00 AM | 06/04/2019 9:00 AM | 08/22/2019 9:30 AM | N/A | N/A |
| Survey End Date/Time | 01/15/2019 2:00 PM | 06/04/2019 12:00 PM | 08/22/2019 1:30 PM | N/A | N/A |
| OGI Technician (see Appendix for OGI Technician Training and Experience) | Evan Musselman | Justin Vecchio | Zachary Hudecek | N/A | N/A |
| Ambient Temp. (°F) | 22 | 70 | 79 | N/A | N/A |
| Sky Conditions | Clear, No clouds | Mostly Sunny, 1%-10% sky is clouds | Mostly Cloudy, 50%-90% sky is clouds | N/A | N/A |
| Max. Wind Speed (MPH) | 4 | 3 | 8 | N/A | N/A |
| LDAR Instrument | Optical Gas Imaging/GFX-320 | Optical Gas Imaging/GFX-320 | Optical Gas Imaging/GFX-320 | N/A | N/A |
| §60.5420a(b)(7)(vi) Deviations from Monitoring Plan | No deviations from the Monitoring Plan | No deviations from the Monitoring Plan | No deviations from the Monitoring Plan | N/A | N/A |
| Deviation(s) Explanation | N/A | N/A | N/A | N/A | N/A |

**§60.5420a(b)(7)(vii) - Number and type of components for which fugitive emissions were detected**

| | | | | | |
|---|---|---|---|---|---|
| Valves | | | | | |
| Connectors | 7 | 3 | 5 | | |
| Pressure Relief Devices | | | | | |
| Open-Ended Lines | | | | | |
| Flanges | | | | | |
| Compressors | | | | | |
| Instruments | | | | | |
| Meters | | | | | |
| Other | | | | | |
| Total No. of Leaks Detected | 7 | 3 | 5 | | |

**§60.5420a(b)(7)(viii) - Number and type of fugitive emissions components that were not repaired as required in §60.5397a(h)**

| | | | | | |
|---|---|---|---|---|---|
| Valves | | | | | |
| Connectors | | | | | |
| Pressure Relief Devices | | | | | |
| Open-Ended Lines | | | | | |
| Flanges | | | | | |
| Compressors | | | | | |
| Instruments | | | | | |
| Meters | | | | | |
| Other | | | | | |

**§60.5420a(c)(15)(ii)(I)(7) – Number and type of components that were tagged as a result of not being repaired during the monitoring survey as required in §60.5397a(h)(3)(ii).**

| | | | | | |
|---|---|---|---|---|---|
| Valves | | | | | |
| Connectors | 7 | 3 | 5 | | |
| Pressure Relief Devices | | | | | |
| Open-Ended Lines | | | | | |
| Flanges | | | | | |
| Compressors | | | | | |
| Instruments | | | | | |
| Meters | | | | | |
| Other | | | | | |

**§60.5420a(b)(7)(ix) - Number and type of difficult-to-monitor and unsafe-to-monitor fugitive emission components monitored**

| | | | | | |
|---|---|---|---|---|---|
| Valves | | | | | |
| Connectors | | | | | |
| Pressure Relief Devices | | | | | |
| Open-Ended Lines | | | | | |
| Flanges | | | | | |
| Compressors | | | | | |
| Instruments | | | | | |
| Meters | | | | | |
| Other | | | | | |

§60.5420a(b)(7)(x) - Date of successful repair of the fugitive emission component (see Repair List).
§60.5420a(b)(7)(xi) - Number and type of fugitive emission components placed on delay of repair and explanation for each delay of repair (see DOR List).
§60.5420a(b)(7)(xii) - Type of instrument used to resurvey a repaired fugitive emissions component that could not be repaired during the initial fugitive emissions finding (see Repair List).

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## Fugitive Emissions Components Placed on DOR

This summary satisfies the annual reporting requirements of §60.5420a(b)(7)(xi), "number and type of fugitive emission components placed on delay of repair and explanation for each delay of repair".

| Component | | | | | |
|---|---|---|---|---|---|
| Quarter | Q1 | Q2 | Q3 | N/A | N/A |
| Survey Date | 1/15/2019 | 6/4/2019 | 8/22/2019 | | |
| Valves | | | | | |
| Connectors | | | | | |
| Pressure Relief Devices | | | | | |
| Open-Ended Lines | | | | | |
| Flanges | | | | | |
| Compressors | | | | | |
| Instruments | | | | | |
| Meters | | | | | |
| Other | | | | | |
| Total No. of Leaks on DOR | 0 | | | | |

| Date Surveyed | Emission ID # | Component Type | Current Repair Status | Delay of Repair Explanation / Justification |
|---|---|---|---|---|
| | | | | |

## Fugitive Emissions Components Repaired During Reporting Period

**This summary satisfies the annual reporting requirements of §60.5420a(b)(7)(x), "date of successful repair of the fugitive emission component" and §60.5420a(b)(7)(xii), "type of instrument used to resurvey a repaired fugitive emissions component that could not be repaired during the initial fugitive emissions finding".**

| Date Surveyed | Emission ID # | Date of Successful Repair | Repair Confirmation Method / Instrument |
|---|---|---|---|
| 2019-01-15 | 26810570 | 2019-Jan-29 | OGI |
| 2019-01-15 | 26810571 | 2019-Jan-29 | OGI |
| 2019-01-15 | 26810572 | 2019-Jan-29 | Snoop |
| 2019-01-15 | 26810573 | 2019-Jan-29 | OGI |
| 2019-01-15 | 26810574 | 2019-Jan-29 | OGI |
| 2019-01-15 | 26810575 | 2019-Jan-29 | OGI |
| 2019-01-15 | 26810569 | 2019-Feb-04 | Snoop |
| 2019-06-04 | 26810922 | 2019-Jun-13 | Snoop |
| 2019-06-04 | 26810923 | 2019-Jun-13 | Snoop |
| 2019-06-04 | 26810924 | 2019-Jun-13 | Snoop |
| 2019-08-22 | 27910146 | 2019-Aug-23 | Snoop |
| 2019-08-22 | 27910147 | 2019-Aug-27 | Snoop |
| 2019-08-22 | 27910144 | 2019-Aug-28 | Snoop |
| 2019-08-22 | 27910145 | 2019-Aug-28 | Snoop |
| 2019-08-22 | 27910143 | 2019-Aug-29 | Snoop |

## OGI Technician Training and Experience

Monitoring surveys are performed by personnel that are trained in the proper operation of the OGIC (Optical Gas Imaging Camera) to be used in the monitoring survey and that have prior experience using OGICs for the purposes of identifying fugitive emissions. Additionally, monitoring personnel are familiar with the types of equipment located at a natural gas compressor station. All monitoring personnel review each site specific monitoring plan prior to performing monitoring surveys at the Facility.

All Monitoring Technicians follow a protocol containing technical procedures, training requirements, and individual and team performance audits. This protocol ensures that each crew member follows a prescriptive training program. The training program includes minimum required field times for each module. Each module uses both written testing and on-site work performance audits to evaluate the crew member on their work performance.

Each crew member must successfully complete their training modules to be allowed to work as a member of the main field crew. The protocol also includes an audit program to evaluate work performance on an on-going basis. This system ensures that each crew member is adhering to the procedures and guidelines of the protocol.

Each monitoring technician:

1) holds a strong knowledge of oil and gas operations and has a detailed understanding of the various processes that are involved in the transportation and processing on natural gas.
2) is trained (certified) and experienced in the use of fugitive emission detection and measurement equipment;
3) has a minimum of 1000 hours of experience on the use of optical gas imaging, ultrasonic leak detection and emission flow rate measurement
4) maintains required safety training and strong understanding of applicable TARGET Safe Operating Procedures; and
5) received performance audits to ensure compliance to our prescriptive fugitive emission assessment protocol

The protocol contains technical procedures, training requirements, and individual and team performance audits. The purpose of our assessment protocol is to:

1) Maintain a high degree of Quality Control;
2) Ensure that all sources of fugitive emissions are identified;
3) Ensure that all source data is consistently recorded to provide reliable and effective emission reduction recommendations.

This protocol eliminates the common problems and barriers that cause many programs to fail. Our staff are trained and audited to avoid many of the common fugitive emission program problems. Some of these common problems include:

- Inexperienced with camera use and the concepts of infrared thermography
- Not using multiple camera angles
- Constantly moving the camera from scene to scene without pausing in each view to look for gas images
- Many leaks are missed by relying solely on the automatic mode (manual mode can be more effective in certain situations)
- Scanning too fast and missing components

Accurate data collection and entry is crucial to maintaining an effective Fugitive Emission Management Program. The data management protocol includes a data QA/QC review process that contains three levels of evaluation:

1) Technician Self Check – at the end of each assessment the technician must review each emission entry to locate and remediate any data inconsistencies
2) Team Lead Review – at the end of each work day the Team Lead will run a QA/QC evaluation on each assessment and emission to ensure that data has been entered following the TARGET Protocol.
3) Project Manager Evaluation – on a weekly basis the project manager will run all emission data through a QA/QC data evaluation to detect and eliminate any inconsistencies.

## OGI Technician Training and Experience

| Survey Date | OGI Technician | Certification Date | Months of OGI Experience |
|---|---|---|---|
| 2019-Jan-15 | Evan Musselman | 2018-Jul-15 | 7 |
| 2019-Jun-04 | Justin Vecchio | 2018-Oct-01 | 9 |
| 2019-Aug-22 | Zachary Hudecek | 2019-Jul-31 | 2 |